Welcome to STN International! Enter x:x

LOGINID:ssspta1652cxf

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS	1	Feb 2	Web Page URLs for STN Seminar Schedule - N. America
NEWS	2	Dec 17	Expanded CAplus Coverage of US, Japanese, WIPO, EPO, and German patents
NEWS	3	Nov 8	Derwent World Patents Index: Technology Focus To Be Added to Basic Index
NEWS	4	Nov 24	STEREO BOND SEARCH PROBLEM WITH STN EXPRESS WITH DISCOVER! 5.0 (WINDOWS ONLY)
NEWS	5	Dec 13	INFOR no longer available
NEWS	6	JAN 18	ESBIOBASE - NEW FREE DISPLAY FORMATS, TRIAL FORMAT ENHANCED

NEWS EXPRESS	STN Express 5.0 Now Available
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS INTER	General Internet Information
NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

All use of STN is subject to the provisions of the STN Customer agreement. Please note that this agreement limits use to scientific research. Use for software development or design or implementation of commercial gateways or other similar uses is prohibited and may result in loss of user privileges and other penalties.

* * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 17:37:16 ON 19 JAN 2000

=> index bioscience

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

INDEX 'ADISALERTS, ADISINSIGHT, AGRICOLA, AIDSLINE, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, CABA, CANCERLIT, CAPLUS, CEABA, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, DRUGNL, ...' ENTERED AT 17:37:32 ON 19 JAN 2000

55 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view search error messages that display as 0* with SET DETAIL OFF.

=> s egl3 or egl5

3	FILE AGRICOLA
1	FILE BIOBUSINESS
7	FILE BIOSIS
6	FILE BIOTECHABS
6	FILE BIOTECHDS
2	FILE CABA

```
          22   FILE CAPLUS
           1   FILE CEABA
           4   FILE DGENE
           5   FILE EMBASE
           4   FILE ESBIOBASE
           4   FILE FSTA
           2   FILE GENBANK
           5   FILE LIFESCI
           9   FILE MEDLINE
           1   FILE NTIS
  44 FILES SEARCHED...
           5   FILE SCISEARCH
          11   FILE TOXLIT
          18   FILE USPATFULL

  19 FILES HAVE ONE OR MORE ANSWERS,    55 FILES SEARCHED IN STNINDEX

L1   QUE EGL3 OR EGL5

=> d rank

F1          22   CAPLUS
F2          18   USPATFULL
F3          11   TOXLIT
F4           9   MEDLINE
F5           7   BIOSIS
F6           6   BIOTECHABS
F7           6   BIOTECHDS
F8           5   EMBASE
F9           5   LIFESCI
F10          5   SCISEARCH
F11          4   DGENE
F12          4   ESBIOBASE
F13          4   FSTA
F14          3   AGRICOLA
F15          2   CABA
F16          2   GENBANK
F17          1   BIOBUSINESS
F18          1   CEABA
F19          1   NTIS


=> file f1-f19

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       1.02       1.23

FILE 'CAPLUS' ENTERED AT 17:38:42 ON 19 JAN 2000
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPATFULL' ENTERED AT 17:38:42 ON 19 JAN 2000
CA INDEXING COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'TOXLIT' ENTERED AT 17:38:42 ON 19 JAN 2000

FILE 'MEDLINE' ENTERED AT 17:38:42 ON 19 JAN 2000

FILE 'BIOSIS' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 BIOSIS(R)

FILE 'BIOTECHABS' ACCESS NOT AUTHORIZED

FILE 'BIOTECHDS' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD
```

```
FILE 'EMBASE' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 Elsevier Science B.V.  All rights reserved.

FILE 'LIFESCI' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 Cambridge Scientific Abstracts (CSA)


FILE 'SCISEARCH' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 Institute for Scientific Information (ISI) (R)

FILE 'DGENE' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD

FILE 'ESBIOBASE' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 Elsevier Science B.V., Amsterdam. All rights reserved.

FILE 'FSTA' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 International Food Information Service

FILE 'AGRICOLA' ENTERED AT 17:38:42 ON 19 JAN 2000

FILE 'CABA' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 CAB INTERNATIONAL (CABI)

FILE 'GENBANK' ENTERED AT 17:38:42 ON 19 JAN 2000

FILE 'BIOBUSINESS' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (C) 2000 Biological Abstracts, Inc. (BIOSIS)

FILE 'CEABA' ENTERED AT 17:38:42 ON 19 JAN 2000
COPYRIGHT (c) 2000 DECHEMA eV

FILE 'NTIS' ENTERED AT 17:38:42 ON 19 JAN 2000
Compiled and distributed by the NTIS, U.S. Department of Commerce.
It contains copyrighted material.
All rights reserved. (2000)

=> s l1 and promoter?

L2          28 L1 AND PROMOTER?

=> dup rem l2

DUPLICATE IS NOT AVAILABLE IN 'DGENE, GENBANK'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L2
L3           23 DUP REM L2 (5 DUPLICATES REMOVED)

=> s l3 and py<1998

   4 FILES SEARCHED...
   5 FILES SEARCHED...
   7 FILES SEARCHED...
   9 FILES SEARCHED...
  12 FILES SEARCHED...
  13 FILES SEARCHED...
  14 FILES SEARCHED...
  16 FILES SEARCHED...
L4          13 L3 AND PY<1998

=> d ibib ab


L4   ANSWER 1 OF 13  CAPLUS  COPYRIGHT 2000 ACS
ACCESSION NUMBER:         1998:144163  CAPLUS
DOCUMENT NUMBER:          128:239936
TITLE:                    Molecular mechanisms of glucose repression in the
                          filamentous fungus Trichoderma reesei
```

AUTHOR(S): Ilmen, Marja
CORPORATE SOURCE: Dep. Biosciences, Div. Genetics, Univ. Helsinki, Helsinki, Finland
SOURCE: VTT Publ. (**1997**), 315, 1-86, I1-I9, II1-II12, III1-III10, IV1-IV16
CODEN: VTTPEY; ISSN: 1235-0621
PUBLISHER: Valtion Teknillinen Tutkimuskeskus
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 54 refs. The filamentous fungus Trichoderma reesei is one of the best studied cellulolytic organisms. It is also an industrially important producer of cellulolytic and hemicellulolytic enzymes. In this work carbon source regulation of cellulase and hemicellulase gene expression was studied at the transcriptional level. Expression of cellulase genes was found to be controlled by sep. induction and repression controls in T. reesei. Genes encoding cellobiohydrolases (cbh1 and cbh2) and endoglucanases (egl1, egl2, and **egl5**) were coordinately induced on media contg. cellulose, sophorose, lactose or cellobiose. Glycerol and sorbitol were non-inducing, non-repressing carbon sources for cellulase transcription, and glucose repressed expression of the genes coding for cellulases and hemicellulases. Depletion of glucose provoked expression of genes encoding cellulases and many hemicellulases. The cre1 gene coding for the glucose repressor was isolated from T. reesei and T. harzianum. The CREI protein is a DNA-binding protein, which is similar to the glucose repressors CREA of Aspergillus nidulans and A. niger, and the MIG1 and MIG2 of Saccharomyces cerevisiae, particularly in the DNA-binding region which comprises two zinc fingers of the Cys2His2 type. The T. reesei strain Rut-C30 expressed a mutated form of the cre1 gene and was defective in glucose repression of cellulase and hemicellulase gene expression. Introduction of the native cre1 gene into the Rut-C30 strain conferred glucose repression of these genes, demonstrating that glucose repression is mediated by the cre1 gene in T. reesei. Functional anal. of the cellulase **promoter** cbh1 was carried out using the E. coli lacZ gene as a reporter. A series of deletions and site-specific alterations were created in the **promoter**. Targeted mutagenesis of certain putative CREI-binding sites resulted in derepression of lacZ expression in the presence of glucose, showing that these sites are involved in mediating glucose repression of the cbh1 **promoter**. Disruption of CREI-binding sites did not impair induction of the cbh1 **promoter** by sophorose, and expression from very short **promoter** derivs. could still be induced by sophorose.

=> d ibib ab 1-13

L4 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1998:144163 CAPLUS
DOCUMENT NUMBER: 128:239936
TITLE: Molecular mechanisms of glucose repression in the filamentous fungus Trichoderma reesei
AUTHOR(S): Ilmen, Marja
CORPORATE SOURCE: Dep. Biosciences, Div. Genetics, Univ. Helsinki, Helsinki, Finland
SOURCE: VTT Publ. (**1997**), 315, 1-86, I1-I9, II1-II12, III1-III10, IV1-IV16
CODEN: VTTPEY; ISSN: 1235-0621
PUBLISHER: Valtion Teknillinen Tutkimuskeskus
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 54 refs. The filamentous fungus Trichoderma reesei is one of the best studied cellulolytic organisms. It is also an industrially important producer of cellulolytic and hemicellulolytic enzymes. In this work carbon source regulation of cellulase and hemicellulase gene expression was studied at the transcriptional level. Expression of cellulase genes was found to be controlled by sep. induction and repression controls in T. reesei. Genes encoding cellobiohydrolases (cbh1

and cbh2) and endoglucanases (egl1, egl2, and **egl5**) were coordinately induced on media contg. cellulose, sophorose, lactose or cellobiose. Glycerol and sorbitol were non-inducing, non-repressing carbon sources for cellulase transcription, and glucose repressed expression of the genes coding for cellulases and hemicellulases. Depletion of glucose provoked expression of genes encoding cellulases and many hemicellulases. The crel gene coding for the glucose repressor was isolated from T. reesei and T. harzianum. The CREI protein is a DNA-binding protein, which is similar to the glucose repressors CREA of Aspergillus nidulans and A. niger, and the MIG1 and MIG2 of Saccharomyces cerevisiae, particularly in the DNA-binding region which comprises two zinc fingers of the Cys2His2 type. The T. reesei strain Rut-C30 expressed a mutated form of the crel gene and was defective in glucose repression of cellulase and hemicellulase gene expression. Introduction of the native crel gene into the Rut-C30 strain conferred glucose repression of these genes, demonstrating that glucose repression is mediated by the crel gene in T. reesei. Functional anal. of the cellulase **promoter** cbh1 was carried out using the E. coli lacZ gene as a reporter. A series of deletions and site-specific alterations were created in the **promoter**. Targeted mutagenesis of certain putative CREI-binding sites resulted in derepression of lacZ expression in the presence of glucose, showing that these sites are involved in mediating glucose repression of the cbh1 **promoter**. Disruption of CREI-binding sites did not impair induction of the cbh1 **promoter** by sophorose, and expression from very short **promoter** derivs. could still be induced by sophorose.

L4 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2000 ACS
ACCESSION NUMBER: 1988:144685 CAPLUS
DOCUMENT NUMBER: 108:144685
TITLE: Expression of two Trichoderma reesei endoglucanases in the yeast Saccharomyces cerevisiae
AUTHOR(S): Penttila, Merja E.; Andre, Lars; Saloheimo, Markku; Lehtovaara, Paivi; Knowles, Jonathan K. C.
CORPORATE SOURCE: Biotech. Lab., VTT, Espoo, SF-02150, Finland
SOURCE: Yeast (**1987**), 3(3), 175-85
CODEN: YESTE3; ISSN: 0749-503X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The cDNA copies of the two endo-.beta.-1,4-glucanase genes, egl1 and **egl3**, from the filamentous fungus T. reesei were expressed in the yeast S. cerevisiae under the control of the yeast phosphoglycerate kinase gene **promoter**. Active EGI and EGIII enzyme was produced and secreted by yeast into the growth medium. The recombinant EGI enzyme was larger and more heterogeneous in size than the native enzyme secreted by Trichoderma due to differences in the extent of N-glycosylation between these two organisms. The morphol. of the yeast cells producing EGI or EGIII was clearly different from control strain.

L4 ANSWER 3 OF 13 USPATFULL
ACCESSION NUMBER: 97:20405 USPATFULL
TITLE: Immunoglobulin production by trichoderma
INVENTOR(S): Nyyssonen, Eini, Helsinki, Finland
Keranen, Sirkka, Helsinki, Finland
Penttila, Merja, Helsinki, Finland
Takkinen, Kristiina, Espoo, Finland
Knowles, Jonathan K.C., Helsinki, Finland
PATENT ASSIGNEE(S): Alko Group Ltd., Helsinki, Finland (non-U.S. corporation)

	NUMBER	DATE	
PATENT INFORMATION:	US 5610034	19970311	<--
APPLICATION INFO.:	US 1991-756251	19910830 (7)	
DISCLAIMER DATE:	20201228		
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1990-552757, filed on 16 Jul 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-496155, filed		

on 19 Mar 1990 which is a continuation of Ser. No. US 1987-44077, filed on 29 Apr 1987, now abandoned
DOCUMENT TYPE: Utility
PRIMARY EXAMINER: LeGuyader, John L.
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein and Fox, p.l.l.c.
NUMBER OF CLAIMS: 48
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 31 Drawing Figure(s); 30 Drawing Page(s)
LINE COUNT: 2868
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods for the production of recombinant immunoglobulins in a Trichoderma host are described.

L4 ANSWER 4 OF 13 USPATFULL
ACCESSION NUMBER: 95:108085 USPATFULL
TITLE: Method of preparing solution enriched in EG III using low molecular weight alcohol, organic salt and inorganic salt
INVENTOR(S): Bower, Benjamin S., San Francisco, CA, United States
PATENT ASSIGNEE(S): Genencor International, Inc., South San Francisco, CA, United States (U.S. corporation)

	NUMBER	DATE	
PATENT INFORMATION:	US 5472864	19951205	<--
APPLICATION INFO.:	US 1995-372540	19950113 (8)	

RELATED APPLN. INFO.: Division of Ser. No. US 1984-228988, filed on 19 Apr 1984 which is a division of Ser. No. US 1992-862641, filed on 3 Apr 1992, now patented, Pat. No. US 5320960, issued on 14 Jun 1994
DOCUMENT TYPE: Utility
PRIMARY EXAMINER: Naff, David M.
ASSISTANT EXAMINER: Meher, Mike
LEGAL REPRESENTATIVE: Stone, Christopher L.
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 15 Drawing Figure(s); 10 Drawing Page(s)
LINE COUNT: 1396
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method for preparing an aqueous solution enriched in EG III from an aqueous mixture containing cellulase proteins, xylanase and EG III is disclosed. The method involves adding an amount of a low molecular weight alcohol selected from the group consisting of ethanol, methanol, propanol and mixtures thereof to the aqueous mixture containing cellulase proteins, xylanase and EG III and an organic salt under conditions wherein substantially all of the cellulase proteins other than EG III and xylanase are precipitated out of the aqueous mixture. The method then involves removing the precipitate from the aqueous mixture so as to recover an aqueous supernate enriched in EG III. Next, the method involves adding an amount of an inorganic salt to the supernate produced in step b) so as to form a second precipitate and a second supernate and then finally collecting the second supernate from the second precipitate to obtain a supernate enriched in EG III.

L4 ANSWER 5 OF 13 USPATFULL
ACCESSION NUMBER: 95:64842 USPATFULL
TITLE: Method for preparing an aqueous solution enriched in both EG-III & xylanase using a low molecular weight alcohol and an organic salt
INVENTOR(S): Bower, Benjamin S., San Francisco, CA, United States
PATENT ASSIGNEE(S): Genencor International, Inc., San Francisco, CA, United States (U.S. corporation)

	NUMBER	DATE	
PATENT INFORMATION:	US 5434072	19950718	<--
APPLICATION INFO.:	US 1994-228988	19940418 (8)	

RELATED APPLN. INFO.: Division of Ser. No. US 1992-862641, filed on 3 Apr

1992, now patented, Pat. No. US 5320960
DOCUMENT TYPE: Utility
PRIMARY EXAMINER: Naff, David M.
ASSISTANT EXAMINER: Meller, Mike
LEGAL REPRESENTATIVE: Horn, Margaret A.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 15 Drawing Figure(s); 10 Drawing Page(s)
LINE COUNT: 1383
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for preparing an aqueous solution enriched in xylanase only, EG III only and both EG III and xylanase from an aqueous mixture containing cellulase proteins, xylanase and EG III is disclosed. The methods involve adding an amount of a low molecular weight alcohol and an organic salt to an aqueous mixture containing cellulase proteins under conditions wherein substantially all of the cellulase proteins other than EG III and xylanase are precipitated out of the aqueous mixture. The methods can then involve adding an inorganic salt to the supernate produced in the previous step so as to form a second precipitate and a second supernate and then finally collecting either the second precipitate from the second supernate to obtain a precipitate enriched in xylanase or the second supernate from the second precipitate to obtain a supernate enriched in EG III.

L4 ANSWER 6 OF 13 USPATFULL
ACCESSION NUMBER: 94:85977 USPATFULL
TITLE: Methods of enhancing printing quality of pigment compositions onto cotton fabrics
INVENTOR(S): Ashizawa, Eunice C., Oakland, CA, United States
Clarkson, Kathleen A., San Francisco, CA, United States
Lad, Pushkaraj J., San Mateo, CA, United States
Larenas, Edward, Moss Beach, CA, United States
PATENT ASSIGNEE(S): Genencor International, Inc., S. San Francisco, CA, United States (U.S. corporation)

	NUMBER	DATE	
PATENT INFORMATION:	US 5352243	19941004	<--
APPLICATION INFO.:	US 1992-843589	19920228 (7)	

DOCUMENT TYPE: Utility
PRIMARY EXAMINER: Lieberman, Paul
ASSISTANT EXAMINER: Einsmann, Margaret
LEGAL REPRESENTATIVE: Burns, Doane, Swecker & Mathis
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 16 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 1621
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed are methods for enhancing the quality of printing on cotton-containing fabrics. Specifically, this methods disclosed herein recite the pretreatment of cotton-containing fabrics with cellulase prior to printing in order to enhance printing characteristics on the fabric such as pigment uptake, enhanced clarity, reduced pigment bleeding, and the like. The methods disclosed herein generally entail treating cotton-containing fabrics with an aqueous cellulase formulation and preferably with an aqueous cellulase solution under agitating conditions.

L4 ANSWER 7 OF 13 USPATFULL
ACCESSION NUMBER: 94:60093 USPATFULL
TITLE: Methods for isolating EG III cellulase component and EG III cellulase in polyethylene glycol using inorganic salt and polyethylene glycol
INVENTOR(S): Lorch, Jeffrey D., Hudson, WI, United States
Clarkson, Kathleen A., San Francisco, CA, United States
Larenas, Edmund, San Carlos, CA, United States
Bower, Benjamin S., San Francisco, CA, United States
Weiss, Geoffrey L., San Francisco, CA, United States

PATENT ASSIGNEE(S): Genencor International, Inc., South San Francisco, CA, United States (U.S. corporation)

	NUMBER	DATE	
PATENT INFORMATION:	US 5328841	19940712	<--
APPLICATION INFO.:	US 1992-862846	19920403 (7)	

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1991-707647, filed on 30 May 1991 which is a continuation-in-part of Ser. No. US 1991-668640, filed on 13 Mar 1991 which is a continuation-in-part of Ser. No. US 1990-593919, filed on 5 Oct 1990, now abandoned And a continuation-in-part of Ser. No. US 1991-770049, filed on 4 Oct 1991

DOCUMENT TYPE: Utility
PRIMARY EXAMINER: Naff, David M.
ASSISTANT EXAMINER: Meller, Michael V.
LEGAL REPRESENTATIVE: Krupen, Karen I.
NUMBER OF CLAIMS: 9
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 9 Drawing Page(s)
LINE COUNT: 1310
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods for isolating EG III cellulase component and enriched EG III cellulase in polyethylene glycol are disclosed. The methods comprise adding an inorganic salt and polyethylene glycol having a molecular weight of from about 5,000 to 10,000 to an aqueous mixture of cellulase proteins under conditions to create a two-phase system. Next, the cellulase proteins other than EG III are separated in an EG III-poor aqueous phase while EG III cellulase component is retained in an EG III-rich polyethylene glycol phase. Lastly, the EG III component can be separated from the polyethylene glycol. The preferred method of separation is alcohol precipitation.

L4 ANSWER 8 OF 13 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1998:166035 BIOSIS
DOCUMENT NUMBER: PREV199800166035
TITLE: Molecular mechanisms of glucose repression in the filamentous fungus Trichoderma reesei.
AUTHOR(S): Ilmen, Marja (1)
CORPORATE SOURCE: (1) VTT Biotechnol. and Food Res., FIN-02044 VTT, Espoo Finland
SOURCE: VTT Publications, (1997) Vol. 0, No. 315, pp. PAGINATION VARIES.
ISSN: 1235-0621.
DOCUMENT TYPE: Article
LANGUAGE: English

AB The filamentous fungus Trichoderma reesei is one of the best studied cellulolytic organisms. It is also an industrially important producer of cellulolytic and hemicellulolytic enzymes. In this work carbon source regulation of cellulase and hemicellulase gene expression was studied at the transcriptional level. Expression of cellulase genes was found to be controlled by separate induction and repression controls in T. reesei. Genes encoding cellobiohydrolases (cbh1 and cbh2) and endoglucanases (egl1, egl2, and **egl5**) were coordinately induced on media containing cellulose, soporose, lactose or cellobiose. Glycerol and sorbitol were non-inducing, non-repressing carbon sources for cellulase transcription, and glucose repressed expression of the genes coding for cellulases and hemicellulases. Depletion of glucose provoked expression of genes encoding cellulases and many hemicellulases. The cre1 gene coding for the glucose repressor was isolated from T. reesei and T. harzianum. The CREI protein is a DNA-binding protein, which is similar to the glucose repressors CREA of Aspergillus nidulans and A. niger, and the MIG I and MIG2 of Saccharomyces cerevisiae, particularly in the DNA-binding region which comprises two zinc fingers of the Cys2His2 type. The T. reesei strain Rut-C30 expressed a mutated form of the cre1 gene and was defective in glucose repression of cellulase and hemicellulase gene expression. Introduction of the native cre1 gene into the Rut-C30 strain conferred glucose repression of these genes, demonstrating that glucose repression

is mediated by the cre1 gene in T. reesei. Functional analysis of the cellulase **promoter** cbh1 was carried out using the E. coli lacZ gene as a reporter. A series of deletions and site-specific alterations were created in the **promoter**. Targeted mutagenesis of certain putative CREI-binding sites resulted in derepression of lacZ expression in the presence of glucose, showing that these sites are involved in mediating glucose repression of the cbh1 **promoter**. Disruption of CREI-binding sites did not impair induction of the cbh1 **promoter** by soporose, and expression from very short **promoter** derivatives could still be induced by sophorose.

L4 ANSWER 9 OF 13 BIOSIS COPYRIGHT 2000 BIOSIS
ACCESSION NUMBER: 1988:132695 BIOSIS
DOCUMENT NUMBER: BA85:67522
TITLE: CONSTRUCTION AND CHARACTERIZATION OF CELLULOLYTIC YEASTS.
AUTHOR(S): PENTTILA M
CORPORATE SOURCE: VTT BIOTECHNICAL LAB., TIETOTIE 2, SF-02150 ESPOO 15, FINLAND.
SOURCE: TECH RES CENT FINL PUBL, (1987) 0 (39), 1-54.
CODEN: PTRFDT. ISSN: 0358-5069.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB The yeast Saccharomyces cerevisiae is used in many biotechnical processes where plant raw material is utilized. However, S. cerevisiae cannot hydrolyze cellulose, the major renewable resource on earth. The successful construction of cellulolytic yeast strains could lead to improvements in the traditional processes, such as brewing, distilling and wine making, and to more versatile utilization of cellulose for energy production and in novel yeast based applications. Five different cellulolytic yeast strains were constructed in this study. The genes coding for the cellobiohydrolases CBHI and CBHII, and the endoglucanases EGI and EGIII of the filamentous fungus Trichoderma reesei, as well as the .beta.-glucosidase gene of Aspergillus niger, were expressed in the yeast S. cerevisiae. All recombinant yeast strains were able to hydrolyze natural cellulosic substrates present in yeast culture medium showing different cellulolytic capabilities. The chromosomal gene of A. niger, coding for .beta.-glucosidase, was cloned on the basis of its expression in S. cerevisiae. The low expression level of .beta.-glucosidase, and the failure to detect expression of some other A. niger genes in yeast, indicated differences in gene expression between yeast and A. niger. The nucleotide sequence of the egll gene, coding for the major endoglucanase EGI of T. reesei, was determined. Overall homology to the cbh1 gene, coding for the major cellobiohydrolase of T. reesei, was noticed. Interestingly, a highly conserved region is shared also with the T. reesei cellulase genes cbh2 and **egl3**, although they are otherwise non-homologous. The cDNA copies of the four T. reesei genes coding for cellobiohydrolases CBHI and CBHII, and endoglucanases EGI and EGIII, were expressed in yeast under the function of the **promoter** of the yeast phosphoglycerokinase gene. All four enzymes were secreted by yeast in active form. The production and secretion of CBHI, CBHII and EGI was studied in detail. The enzymes produced entered the yeast secretory pathway but seemed to differ in their subcellular localization. All three enzymes, however, were efficiently secreted to the yeast culture medium. More than 70% of the cellobiohydrolases produced was found in the growth medium and over 100 mg/l of extracellular CBHII was recovered after fermenter cultivation. The three enzymes were produced by yeast in highly glycosylated form. The specific activity of the CBHII enzyme produced by yeast was slightly reduced compared to the native enzyme secreted by T. reesei. In addition, the cDNA copy of the egll gene of T. reesei was transferred to brewer's yeast both on a multicopy plasmid and by chromosomal integration. The glucanolytic brewer's yeasts constructed were able to efficiently hydrolyze .beta.-glucans present in wort. This lead to improvements in the brewing process where excess barley .beta.-glucans cause filtration problems and hazes and precipitates in finished beer.

L4 ANSWER 10 OF 13 DGENE COPYRIGHT 2000 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1995N-Q79675 DNA DGENE
TITLE: DNA encoding new Trichoderma endo:glucanase - and related

vectors and transformed cells, used to modify lignocellulose and cellulose materials, e.g. in pulp, paper or textile industries

INVENTOR: Lantto R; Maentyla A; Paloheimo M; Penttilae M; Saloheimo A; Siika-aho M; Suominen P

PATENT ASSIGNEE: (ALKO-N)ALKO OY AB

PATENT INFO: **WO 9428117 A 19941208** **67p**

APPLICATION INFO: WO 1994-FI234 19940602

PRIORITY INFO: FI 1993-2521 19930602

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 1995-022790 [03]

AB Two primers (Q79674, Q79675) were used to amplify the **egl5** cDNA and cbh1 terminator as one fragment for its use in the constructon of an expression vector which also comprised the cDNA1 **promoter** sequence along with an endoglucanase gene designated EGV (See Q79670). The enzyme encoded by EGV comprises a core domain, a linker region and a cellulose binding domain. It is used to modify (ligno)cellulosic (partic. fibrous) substrates, esp, for the degredation of cellulose and/or beta-glucan in the pulp, paper, textile and fodder industries. Typical applications are: increasing the nutritional value of barley; removal of colour from denim jeans; de-inkings of paper, treatment of recycled fibres and improvement of pulp drainage. The enzyme has an elongated structure that facilitates penetration between adjacent cellulose molecules, and it may show a synergistic activity with other components of a cellulolytic enzyme mixture. It has a higher optimum pH than other Trichoderma endoglucanases

L4 ANSWER 11 OF 13 DGENE COPYRIGHT 2000 DERWENT INFORMATION LTD

ACCESSION NUMBER: 1995N-Q79674 DNA DGENE

TITLE: DNA encoding new Trichoderma endo:glucanase - and related vectors and transformed cells, used to modify lignocellulose and cellulose materials, e.g. in pulp, paper or textile industries

INVENTOR: Lantto R; Maentyla A; Paloheimo M; Penttilae M; Saloheimo A; Siika-aho M; Suominen P

PATENT ASSIGNEE: (ALKO-N)ALKO OY AB

PATENT INFO: **WO 9428117 A 19941208** **67p**

APPLICATION INFO: WO 1994-FI234 19940602

PRIORITY INFO: FI 1993-2521 19930602

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 1995-022790 [03]

AB Two primers (Q79674, Q79675) were used to amplify the **egl5** cDNA and cbh1 terminator as one fragment for its use in the constructon of an expression vector which also comprised the cDNA1 **promoter** sequence along with an endoglucanase gene designated EGV (See Q79670). The enzyme encoded by EGV comprises a core domain, a linker region and a cellulose binding domain. It is used to modify (ligno)cellulosic (partic. fibrous) substrates, esp, for the degredation of cellulose and/or beta-glucan in the pulp, paper, textile and fodder industries. Typical applications are: increasing the nutritional value of barley; removal of colour from denim jeans; de-inkings of paper, treatment of recycled fibres and improvement of pulp drainage. The enzyme has an elongated structure that facilitates penetration between adjacent cellulose molecules, and it may show a synergistic activity with other components of a cellulolytic enzyme mixture. It has a higher optimum pH than other Trichoderma endoglucanases

L4 ANSWER 12 OF 13 DGENE COPYRIGHT 2000 DERWENT INFORMATION LTD

ACCESSION NUMBER: 1995N-Q79673 DNA DGENE

TITLE: DNA encoding new Trichoderma endo:glucanase - and related vectors and transformed cells, used to modify lignocellulose and cellulose materials, e.g. in pulp, paper or textile industries

INVENTOR: Lantto R; Maentyla A; Paloheimo M; Penttilae M; Saloheimo A; Siika-aho M; Suominen P

PATENT ASSIGNEE: (ALKO-N)ALKO OY AB

PATENT INFO: **WO 9428117 A 19941208** **67p**
APPLICATION INFO: WO 1994-FI234 19940602
PRIORITY INFO: FI 1993-2521 19930602
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 1995-022790 [03]
AB Two primers (Q79672, Q79673) were used to amplify the cDNA1 gene **promoter** for its use in the constructon of an expression vector which also comprised the **egl5** cDNA and cbh1 terminator along with an endoglucanase gene designated EGV (See Q79670). The enzyme encoded by EGV comprises a core domain, a linker region and a cellulose binding domain. It is used to modify (ligno)cellulosic (partic. fibrous) substrates, esp, for the degredation of cellulose and/or beta-glucan in the pulp, paper, textile and fodder industries. Typical applications are: increasing the nutritional value of barley; removal of colour from denim jeans; de-inkings of paper, treatment of recycled fibres and improvement of pulp drainage. The enzyme has an elongated structure that facilitates penetration between adjacent cellulose molecules, and it may show a synergistic activity with other components of a cellulolytic enzyme mixture. It has a higher optimum pH than other Trichoderma endoglucanases

L4 ANSWER 13 OF 13 DGENE COPYRIGHT 2000 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1995N-Q79672 DNA DGENE
TITLE: DNA encoding new Trichoderma endo:glucanase - and related vectors and transformed cells, used to modify lignocellulose and cellulose materials, e.g. in pulp, paper or textile industries
INVENTOR: Lantto R; Maentyla A; Paloheimo M; Penttilae M; Saloheimo A; Siika-aho M; Suominen P
PATENT ASSIGNEE: (ALKO-N)ALKO OY AB
PATENT INFO: **WO 9428117 A 19941208** **67p**
APPLICATION INFO: WO 1994-FI234 19940602
PRIORITY INFO: FI 1993-2521 19930602
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 1995-022790 [03]
AB Two primers (Q79672, Q79673) were used to amplify the cDNA1 gene **promoter** for its use in the constructon of an expression vector which also comprised the **egl5** cDNA and cbh1 terminator along with an endoglucanase gene designated EGV (See Q79670). The enzyme encoded by EGV comprises a core domain, a linker region and a cellulose binding domain. It is used to modify (ligno)cellulosic (partic. fibrous) substrates, esp, for the degredation of cellulose and/or beta-glucan in the pulp, paper, textile and fodder industries. Typical applications are: increasing the nutritional value of barley; removal of colour from denim jeans; de-inkings of paper, treatment of recycled fibres and improvement of pulp drainage. The enzyme has an elongated structure that facilitates penetration between adjacent cellulose molecules, and it may show a synergistic activity with other components of a cellulolytic enzyme mixture. It has a higher optimum pH than other Trichoderma endoglucanases

=>
Connection closed by remote host